REMARKS

Claims 11-31 will be pending upon entry of the present amendment. Claims 1-10 were canceled. Claims 15-16, 19, and 28 are being amended. Claims 29-31 are new. No new matter is being added.

The Abstract was objected to because it exceeded 150 words and used legal phraseology. A new Abstract is being provided.

Claims 16-24 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement because the Examiner asserts that claim 11 recites "an error control method," claims 16-24 recite steps for designing an error control code, and the specification does not teach the steps of claims 16-24 as part of an error control method. The disclosure was objected to for substantially the same reason.

The applicants respectfully disagree with the Examiner's enablement assertions. One of the steps of the error control method of claim 11 is "encoding the converted first information word into a first codeword having k+n coded symbols in the second base." The specification and claim 16 specify that, in one embodiment, the encoding step multiplies the information word by a generating matrix (see, e.g., p. 7, line 11 – p. 8, line 16; p. 15, line 14 – p. 17, line 18; original claim 1). The specification explains in great detail many steps for producing the generating matrix in various embodiments (see, e.g., p. 8, line 17 – p. 11, line 8; pages 19-23; and original claim 1). Since the encoding step of the error control method uses a generating matrix in the embodiment recited in claim 16, the steps of producing the generating matrix are inherently part of the encoding step of the error control method.

The applicants respectfully disagree with the Examiner's implication that using a single error correction code means that the method steps of claims 16-24 are not part of an error control method.[1] Nothing in section 112 or logically requires a generating matrix to be produced repeatedly in order for the steps of production to be considered as part of an encoding step that uses the generating matrix. In other words, the encoding step can create a generating matrix once and use it many times to create codeword without creating any enablement

[1] The applicants assume that "a single error correction code" refers to a single generating matrix rather than a single output codeword.

problems. The applicants respectfully submit that the Examiner is creating an artificial distinction between creating and using a generating matrix that is not required by logic or the law.

For the foregoing reasons, claims 16-24 are supported by an enabling disclosure.

In addition, claims 16-24 were rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for failing to define cooperative relationships between the steps of claims 16-24 and the steps of claim 11.

The applicants respectfully disagree. One of the steps of the error control method of claim 11 is "encoding the converted first information word into a first codeword having k+n coded symbols in the second base." Claim 16 further defines the encoding step by reciting that "the encoding step includes generating through an operation of multiplication between the first information word and a generating matrix." Claim 16 further recites sub-steps of the encoding step that are used to determine the generating matrix. Thus, claim 16 specifically defines the cooperative relationships between the steps of claim 16 and the encoding step of the error control method of claim 11.

Claims 16-24 were also rejected under 35 U.S.C. § 112, second paragraph, as being indefinite because the symbols b, a_1, a_2, ... were undefined. Claim 16 is being amended to further define those symbols. Claims 17-24 depend on claim 16.

For the foregoing reasons, amended claims 16-24 particularly point out and distinctly claim the invention.

Claims 11-15 and 25-28 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,378,104 to Okita in view of 6,233,717 to Choi.

Okita and Choi do not teach or suggest the invention recited in claim 11. Claim 11 recites an error control method that includes converting a first information word, having input symbols in a first base, into a second base by converting the input symbols into input symbols in the second base. For example, one embodiment in the specification describes converting symbols from base 4 (quaternary) to base 16 (hexadecimal).

Okita and Choi simply do not convert input symbols from a first base into a second base. Instead, Okita transforms input data in a first Galois field into data in a second

Galois field without changing bases. Okita explicitly states that the transformation is from Galois field $GF_a(2^m)$ to Galois field $GF_b(2^m)$, which means that the base is 2^m in both fields (col. 4, line 28; see also col. 10, lines 60-62). Moreover, one can see from Figure 2 of Okita that the input and output symbols are in groups of 8 binary bits. Choi similarly makes use of codes with symbols that are always in base 2 (col. 4, lines 34-35 and col. 5, lines 4-5 and 25). Accordingly, claim 11 is nonobvious in view of Okita and Choi.

Claims 12-13 and 25 depend on claim 11, and thus, are also nonobvious.

Although the language of claims 26-28 differs from that of claims 11-13 and 25, the allowability of claims 26-28 will be apparent in view of the above discussion.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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